

Application No.: 10/517,465

Docket No.: TAW-011USRCE

REMARKS

In this Response, Applicants amend independent claim 1 and cancel claims 2 and 3. Applicants withdraw claims 5-13, 15 and 18-23, reserving the right to file the withdrawn claims in a divisional application. Claim 1 is currently pending. No new matter has been introduced. Support for the claim amendments can be found in previously presented claims 2 and 3. Applicants respectfully submit that the pending claim defines over the art of record.

Rejection of Claims 1-3 under 35 U.S.C. § 102

Claims 1-3 are rejected under 35 U.S.C. § 102(b) as being unpatentable over United States Patent Number 5,107,235 to Torres-Isea (hereafter "Torres-Isea"). Applicants respectfully traverse the 35 U.S.C. § 102(b) rejection of claims 1-3 as set forth below.

Applicants respectfully submit that the Torres-Isea reference fails to disclose at least the following features of amended independent claim 1: "a resilient shape memory member with superelasticity," "said magnetic field generator being fixed to said resilient shape memory member; wherein said magnetic body is attached to an end of said resilient shape memory member," and that "at least part of said resilient shape memory member is covered with said magnetic body."

The Torres-Isea reference, as represented in Figure 4, relates to an electric current actuator including a thermally responsive force generator and an electromagnetically responsive force generator (Torres-Isea, abstract). A shape-memory alloy Belleville washer 44 is provided in close proximity to a bus bar 50 (Torres-Isea, Figure 4). The washer 44 engages a shoulder on a coupling member 46 (Torres-Isea, Figure 4). The coupling member 46 is attached to an armature 48 and passes through an opening 51 in the bus bar (Torres-Isea, Figure 4). A magnetic yoke 55 partially surrounds this region of the bus bar 50 to couple the magnetic field of the bus bar to the armature (Torres-Isea, Figure 4). Heat is transferred from the bus bar 50 to the washer 44 (Torres-Isea, Figure 4). When the washer 44 reaches its transition temperature, it starts to contract, urging the armature 48 toward the magnetic yoke 55 (Torres-Isea, Figure 4).

The Torres-Isea reference does not disclose "a resilient shape memory member with superelasticity," as recited in claim 1. The Examiner points to the shape-memory alloy

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Belleville washer 44 in the Torres-Isea reference as disclosing a resilient shape memory member. However, the Torres-Isea reference does not disclose that the washer 44 has superelasticity, as required by claim 1.

In addition, the Torres-Isea reference does not disclose "said magnetic field generator being fixed to said resilient shape memory member; wherein said magnetic body is attached to an end of said resilient shape memory member," as recited in claim 1. The Examiner points to the washer 44 in the Torres-Isea reference as disclosing the resilient shape memory member, the bus bar 50 as disclosing the magnetic field generator, and the armature 48 and the magnetic yoke 55 as disclosing the magnetic body.

With respect to the embodiment illustrated in Figure 4 pointed to by the Examiner, the reference merely teaches that the washer 44 is in close proximity to the bus bar 50 (Torres-Isea, column 3, lines 43-44). The reference does not disclose that the bus bar 50 is fixed to the washer 44. In addition, neither the yoke 55 nor the armature 48 is attached to washer 44 (Torres-Isea, Figure 4). As such, the Figure 4 embodiment of the reference fails to disclose "said magnetic field generator being fixed to said resilient shape memory member; wherein said magnetic body is attached to an end of said resilient shape memory member," as recited in claim 1.

Similarly, with respect to the embodiment illustrated in Figure 5, the reference shows that the magnetic field generator 65 is attached to a beam and not to the shape memory element 64 (Torres-Isea, Figure 5). In addition, the armature 66 is attached to the beam 60 and not to the shape memory element 64 (Torres-Isea, Figure 5). As such, the Figure 5 embodiment of the reference fails to disclose "said magnetic field generator being fixed to said resilient shape memory member; wherein said magnetic body is attached to an end of said resilient shape memory member," as recited in claim 1.

Furthermore, with respect to the embodiment illustrated in Figure 1, the reference shows that the coil 12 is not fixed to the shape memory spring 10 (Torres-Isea, Figure 1). As such, the Figure 1 embodiment of the reference fails to disclose "said magnetic field generator being fixed to said resilient shape memory member; wherein said magnetic body is attached to an end of said resilient shape memory member," as recited in claim 1.

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The Torres-Isea reference does not disclose in its Figures or Specification that the magnetic field generator is fixed to the resilient shape memory member and that the magnetic body is attached to an end of the resilient shape memory member, as required by claim 1.

Furthermore, the Torres-Isea reference does not disclose that "at least part of said resilient shape memory member is covered with said magnetic body," as recited in claim 1. The Examiner points to the washer 44 and the magnetic yoke 55 as disclosing the resilient shape memory member and the magnetic body recited in claim 1, respectively. Applicants respectfully disagree because the magnetic yoke 55 is not in physical proximity to the washer 44 and does not cover the washer 44 (Torres-Isea, Figure 4). Applicants respectfully draw the Examiner attention to Applicants' Figure 4 in which a soft magnetic covering layer 4 is formed on the resilient shape memory member 1. In contrast, Figure 4 of the Torres-Isea reference shows that the magnetic yoke 55 does not cover or even touch the washer 44 (Torres-Isea, Figure 4). Similarly, in the embodiment illustrated in Figure 5 of the Torres-Isea reference, the armature 66 does not cover the shape memory element 64 (Torres-Isea, Figure 5). Furthermore, in the embodiment illustrated in Figure 1 of the Torres-Isea reference, the armature 14 also does not cover the shape memory member 10 (Torres-Isea, Figure 1). The Torres-Isea reference does not disclose in its Figures or Specification that the shape memory member is covered with a magnetic body, as required by claim 1.

In view of the foregoing amendments and arguments, Applicants respectfully request reconsideration and allowance of claim 1.

Applicants have canceled claims 2 and 3. As such, the 35 U.S.C. § 102(b) rejection of claims 2 and 3 is rendered moot.

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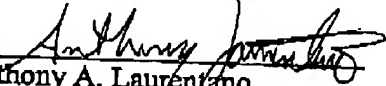
CONCLUSION

In view of the foregoing amendments and arguments, Applicants believe the pending application is in condition for allowance.

Applicants believe that no fee is due with this statement. However, if a fee is due, please charge our Deposit Account No. 12-0080, under Order No. TAW-011USRCE from which the undersigned is authorized to draw.

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Respectfully submitted,

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